3. *Part 68 Regulation and Innovation*

Today's cable industry is currently in the process of conversion from analog to digital technology, and an explosion of new features and services is evident. Requiring standardized interfaces would interfere with competition among existing cable services and erect barriers to new services.

Amending Part 68 provisions requires a rulemaking proceeding. It typically takes the FCC about two years or more to adopt rule changes from the time a Petition for Rulemaking is filed.

The combination of Part 68's detailed technical specifications and the administrative difficulty in making changes to it would be constraining to the introduction of new technologies and services in cable networks. Indeed, examples of such constraining can be cited in telephone networks.

For example, many new PBX systems employ telephone sets that communicate with the PBX switch using digital control channel signals; this permits a variety of services that are based on digital networking, such as allowing a telephone set to change its identity so that a telephone number can follow an employee as he moves through the building. But these digital telephone sets cannot be connected directly to the telephone network, because their digital signals do not conform to Part 68. The PBX switch filters out the control channel and other digital signals before any calls are connected into the public telephone network.

Part 68 requires telephone sets to communicate with central office switches by

means of "in band" signals, which simply means dialing a special sequence of characters and numbers. Instead of simply pushing a dedicated button on an advanced digital telephone set, as is the case with digital telephones used with private PBX networks, a public telephone network customer today must dial a special set of codes such as *70 or #69 in order to use new special telephone services.

Similarly, Part 68 makes no provision for new transmission methods such as Asynchronous Transfer Mode (ATM), Asymmetric Digital Subscriber Line (ADSL), or, until recently, Integrated Services Digital Networks (ISDN). Such techniques may be (and in fact are) employed in private networks. The FCC in late 1993 proposed to add ISDN to Part 68, but rules were only finally released 11 days ago, on March 7, 1996. See *Notice of Proposed Rulemaking in CC Docket No. 93-268*, 9 FCC Rcd 1068, adopted October 22, 1993.

As noted previously,[7] Congress has prohibited the Commission from applying Part 68 to open video networks. "Section 302(b)(3) of the conference agreement specifically repeals the Commission's video dialtone rules. Those rules implemented a rigid common carrier regime, including the Commission's customer premises equipment and Computer III rules, and thereby created substantial obstacles to the actual operation of open video systems." Joint Explanatory Statement of the Committee of Conference, at Section 653(c)(3).

The cable industry today is proceeding rapidly in digital technology and innovation. Deployment of digital video equipment has begun. First generation cable

[7] See *supra*, p. 9.

modems to enable high speed access to the Internet are becoming available. CD-quality digital audio services are available on many cable systems. Game services that employ digital transmission, such as the Sega Channel, are rolling out. Competitive electronic program guide services are emerging. Two-way services that use the 5-40 MHz band for return channel signals, including telephony services and interactive television, are being tested. A dozen new services, if subject to Part 68, means a dozen new interfaces added to Part 68. Recent experience with respect to adding ISDN to Part 68 -- a process that took more than two years -- would present great difficulty for the regulatory process. New services that require new Part 68 sanctioned interfaces could be delayed.

The alternative, forcing competitive services to use the same interface, would interfere with the workings of a competitive marketplace. Instead of one interface for StarSight electronic guide and another one for TV Guide On Screen, a more likely outcome would be a generic program guide interface. Instead of one interface for the Sega Channel and another for Nintendo, there would be one generic game channel interface. Instead of one interface for Music Choice digital radio and another for DMX, there would be one generic interface for digital audio. Picking a single interface for services that already exist would be equivalent to picking a winner, and creating a loser, in a marketplace that is now competitive. Requiring a standard interface for each new service would stifle innovation by tying up new service providers in an endless standards process, preventing them from offering new services until the standards are in place.

4. Network Interface Disclosure and Cable System Security

While Part 68 contains the technical rules that govern telephone terminal equipment, the behavior of telephone carriers with respect to terminal equipment is

regulated under Section 64.702. In particular, Section 64.702(d)(2) requires telephone carriers to "disclose to the public all information relating to network design and technical standards and information affecting changes to the telecommunications network which would affect either intercarrier interconnection or the manner in which customer premises equipment is attached to the interstate network...."

Such disclosure would compromise the security of addressable cable systems. As described above, control signals are embedded in the broadband cable signal and contain the authorization messages addressed to each subscriber's box. It is precisely these control signals that would have to be disclosed in order to comply with Section 64.702. If it were applied to cable systems, Section 64.702 would compromise security.

5. *Part 68 Regulation and Proprietary Technology*

If the Commission decides to move in the direction of a standardized cable security system as a way to assure that cable boxes from one cable system will work in another city, the Commission must keep in mind that all video security systems in use today incorporate proprietary technology. The Commission may not simply pick one of the current systems as the new Part 68 standard for cable systems, and establish a compulsory licensing and royalty system. The Commission has no authority to compel a patent holder to allow others to use patented technology.

The Commission has never attempted to compel patent holders to license others to use their technology. In adopting a color television standard based on RCA's patented system, the Commission noted that it could use the antitrust laws or could seek additional legislative authority if RCA refused to license its technology on reasonable terms. *Television Broadcast Service*, 41 FCC 1, 41 (1950). In adopting the AT&T-

patented standard Part 68 jacks and plugs, the Commission relied on AT&T's promise of voluntary licensing rather than trying to require compulsory licensing. *Standard Plugs and Jacks*, 62 FCC 2d 735, 738 (1976). As far as we are aware, the Commission has only once proposed a mandatory licensing system for private patents, in the case of Comsat patents paid for by INTELSAT. The Commission suggested a compulsory licensing system as a means of compensating for the competitive advantages Comsat enjoyed over other U.S. companies because of its government-granted monopoly and its role as the U.S. signatory to INTELSAT. *Comsat Study*, 77 FCC 2d 564, 711 (1980). But even then, no such compulsory licensing system was adopted. Comsat Corporate Structure, 90 FCC 2d 1159, 1995 (1982).

Consequently, for any new cable TV regulatory regime, the Commission would have to rely on industry, and in particular on the Society of Cable Telecommunications Engineers, to develop standards. The SCTE is the only cable industry standards-setting organization, and the only accredited U.S. standards organization that is technically qualified to develop cable security standards.

6. *Need for Transition*

After Part 68 was adopted, customers were almost immediately able to purchase telephones from carriers, and from manufacturers who supplied phones to carriers. Eventually, telephones from other suppliers could be purchased. They generally connected properly to the phone network wherever they were plugged in.

Promoting widespread availability of cable boxes through regulation raises a number of difficult issues. The Commission does not have the authority to require manufacturers to employ any particular distribution channels, just as it does not have the

authority to require private manufacturers to license proprietary technology to others.[8]

Of course, cable boxes manufactured for use in a particular cable system, and then sold to subscribers, would work fine in the specific cable system they were intended for. But, as discussed previously, if the owner were to move to another city and subscribe to the cable system there, some or all of the features of the cable box probably would not work.

Assuming that a standardized cable security system would provide adequate security, an assumption that very probably is invalid and certainly very risky, a long transition period would be needed to accomplish sufficient standardization of the security system to allow a single cable box to work in cable systems throughout the country. New designs and standards would be needed. The work would have to be done by industry, namely the Society of Cable Telecommunications Engineers. The Commission would then

[8] Pirate cable boxes not only steal cable programming, they are theft of the intellectual property of the manufacturer of legitimate equipment for use on that network.

have to give cable operators sufficient time to amortize their existing investment in cable boxes and headend equipment.

It is very doubtful, however, that it is possible to develop a standardized analog cable security system that is sufficiently secure in a normal open-to-the-public standards process. The standards process itself, coupled with the normal requirement that a technical standard be published, would provide pirates with information they need to crack the system.

IV. Conclusion

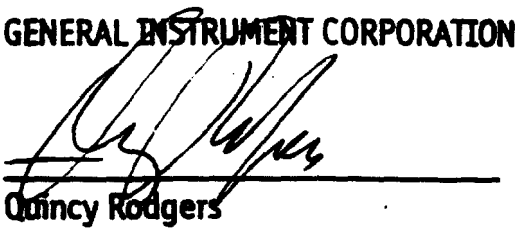
For all the foregoing reasons, GI believes that the Commission should not apply Part 68 or *Computer Inquiry* type regulation to the cable television industry or to advanced broadband video networks. In this era of rapid innovation, the market must be allowed to experiment with different approaches, free from premature standardization.

As the Commission considers rules for inside wiring, it must also consider the serious potential that such wiring will increasingly cause signal leakage and interference.

The appropriate response is to adopt the SCTE standard for coaxial cable used for that purpose.

Respectfully submitted,

GENERAL INSTRUMENT CORPORATION



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